

III-NITRIDE LIGHT EMITTING DEVICES FABRICATED BY SUBSTRATE REMOVAL

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ABSTRACT OF THE DISCLOSURE

A III-nitride light-emitting structure including a p-type layer, an n-type layer, and a light emitting layer is grown on a growth substrate. The III-nitride light-emitting structure is wafer bonded to a host substrate, then the growth substrate is removed. In some embodiments, a first electrical contact and first bonding layer are formed on the III-nitride light-emitting structure. A second bonding layer is formed on the host substrate. In such embodiments, wafer bonding the III-nitride light emitting structure to the host substrate comprises bonding the first bonding layer to the second bonding layer. After the growth substrate is removed, a second electrical contact may be formed on a side of the III-nitride light-emitting device exposed by removal of the growth substrate.